

Health and Safety Information

Focus Questions:

- When do Observers fill out a vessel safety checklist?
- A Commercial Vessel Safety Examination Decal is good for how many years from the date of issue?
- How should Observers respond to an emergency on board?
- What are the procedures to follow in an abandon ship situation?
- What are the seven steps to survival?


Chapter Outline:

- I. Introduction
- II. Safety Regulations
- III. Before Observers Board the Vessel
- IV. Safety While Boarding or Disembarking Vessels
- V. Emergencies on Board
- VI. Federal Requirements for Commercial Fishing Industry Vessels

I. Introduction

Commercial fishing is a dangerous occupation. Slippery decks, heavy gear, and an inhospitable environment are inherent dangers on fishing vessels. The safety and survival material presented here and in Observer training is only an introduction to these topics. There are many pamphlets, books, and videos that provide more detailed information about sea safety and survival including the North Pacific Fishing Vessel Owners Association's *Vessel Safety Manual*, and the University of Alaska's Marine Advisory Bulletin "Beating the Odds on the North Pacific", which will be given to you. Most fishing vessels are operated by safety-minded skippers who realize the danger of their occupation and consider safety in all that they do. Use the knowledge and experience of the vessel's crew for guidance on safety on board the vessel. They are certainly concerned about the safety of an Observer, a guest on their vessel, and will make sure that dangers for Observers are minimized. No matter how cautious the crew is it is **the Observers' responsibility** to keep themselves safe and know how to react in all emergency situations.

II. Safety Regulations

The Commercial Fishing Vessel Safety Act of 1988 mandates certain safety equipment, instructions, and drills aboard vessels that operate beyond the boundary line (a federally designated line between points of land) or carry more than 16 individuals. Most vessels that need Observers fall under these regulations  In mid 1998, NOAA Fisheries adopted regulations to ensure the adequacy and safety of fishing vessels carrying Observers. Under 50 CFR Part 600, owners and operators of fishing vessels that carry Observers are required to comply with U. S. Coast Guard safety regulations (see Appendix P). A vessel is considered inadequate or unsafe if it does not comply with the regulations regarding Observer accommodations or if it has

not passed a USCG safety examination or inspection. If Observers feel uncomfortable boarding a vessel because it is unsafe or inadequate for you to carry out your required duties, contact a NOAA Fisheries coordinator immediately. A vessel that would normally carry an Observer, but is deemed unsafe, is prohibited from fishing without an Observer or a waiver.

When boarding a vessel, regulations mandate that Observers receive a safety orientation. This may be as simple as a crew member showing the Observer around, but may include watching videos, donning immersion suits, or conducting drills.

III. Before Observers Board the Vessel

WCGOP Observers are required to check every vessel they board for safety equipment required by U.S. Coast Guard regulations. Prior to leaving on the first trip on any vessel, all Observers must do the following two things:

- Complete a Vessel Safety Orientation Checklist (See Figure 8-1).
- Mail or fax a copy of the completed Vessel Safety Orientation Checklist to the assigned coordinator.

After the initial trip, periodically verify that the vessel safety gear remains on the vessel and is in working order. If at any point the vessel does not meet U.S. Coast Guard safety regulations, the vessel is considered unsafe to carry an Observer and you may not board. If this should occur, contact a coordinator immediately.

Vessel Safety Orientation Checklist

The Vessel Safety Orientation Checklist is designed to facilitate the initial safety check. Always verify all the items on the checklist before embarking on a vessel for the first time. Write thorough comments on any items that are unavailable, unsafe or look inadequate. Always advise a coordinator immediately of any unsafe situation and NEVER leave on a vessel that you do not feel is safe.

Checklist of Vessel Safety Equipment

1. Check for safety inspection documentation. Look for a current USCG Commercial Fishing Vessel Safety Examination decal. These decals are valid for two years from the month issued, indicated with the hole punch (See Figure 8-2).

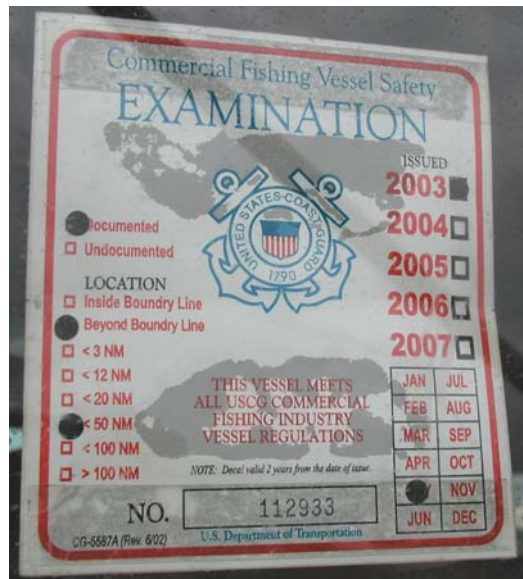


Figure 8-2: USCG Commercial Fishing Vessel Safety Examination Decal

2. Find the station billet (commonly called the station "bill"), a posted placard describing the role of all hands on board (including the Observer) in an emergency.

3. Locate life rafts - Are you assigned to a particular one? Is there enough life raft capacity for everyone on board including you? Check and record the service dates displayed on the canister and hydrostatic release.
4. Life raft equipment – Is the life raft equipped with a SOLAS pack? Ask the captain.
5. Immersion suits/life preservers - where are the survival suits and PFDs located? Are there enough for everyone on board? Are they accessible at all times? Observers will be issued an immersion suit and PFD with their sampling gear. Observers should always keep the immersion suit in a place where it can be accessed easily and quickly. The cabin is recommended, but may have limited space.
6. Life rings - Where are they? Are they accessible?
7. Flares – Where are the flares located? Check and record the expiration date. Does this vessel also have approved smoke signals?
8. EPIRBS – Where is the Emergency Position Indicating Radio Beacon (EPIRB)? Is there more than one? Read the instructions. Check and record battery, hydrostatic release, and NOAA registration expiration dates.
9. Fire extinguishers – Where are they? Are they accessible? Are they up to date, charged, and ready to use?
10. First aid materials – Where are first aid materials kept? Is there a reference book on board?
11. Radios – Where are the radios? Are emergency call instructions posted nearby? Do you know how to operate the radio for an emergency call?

12. Are there emergency instructions for the vessel? Did the skipper ensure that you were given a safety orientation explaining the following?

- Survival craft embarkation stations
- Survival craft assignments
- Fire/emergency/abandon ship signals
- Immersion (survival suit locations and donning instructions)
- Procedures for making a distress call
- Essential actions required of each person in an emergency
- Procedures for recovering a person overboard
- Procedures for fighting a fire

13. Injury placard – Is there an injury placard? Where is it?

14. Compass – Does the vessel have a compass?

15. Anchor – Does the vessel have an anchor?

16. General alarm – Does the vessel have a general alarm? Ask the captain to test the general alarm so that you can hear what it sounds like.

17. High water alarm – Does the vessel have a high water alarm?

18. Bilge pump – Does the vessel have a bilge pump?

19. Adequate means of escape – Does the vessel have adequate means of escape from the quarters? Are any hatches or passageways blocked or difficult to get to? Memorize the exit route from the cabin, the galley, and other locations where a fair amount of time is spent.

20. Water/weather tight closures present both on the interior and outside? Can they be secured in case of heavy weather or emergencies?

21. Nautical charts for applicable areas – Does the vessel have the applicable charts?

VESSEL SAFETY ORIENTATION CHECKLIST

Verify all items on this checklist before embarking on a vessel. **Record the Vessel Safety Examination Decal date in the Comments/Dates section.** Record the life raft size, ex. 4 or 6 person. Write thorough comments on any items that are unavailable, unsafe or you feel are not adequate. Advise your NMFS coordinator on any unsafe situations. **DO NOT LEAVE ON A VESSEL THAT YOU DO NOT FEEL IS SAFE.** Items listed below may not necessarily deem a vessel safe. Mail or fax this form to your coordinator prior to leaving on the first trip.

Vessel Name: _____

Observer Name: _____

Date: _____

	Available	Unavailable	Comments/Date
Commercial Fishing Vessel Safety Decal	()	()	Date: _____
Station bill/placard	()	()	_____
Life raft	()	()	Date: _____
Liferaft equipment	()	()	_____
Immersion Suits/PFDs	()	()	_____
Life rings	()	()	_____
Flares/Distress signals	()	()	Date: _____
EBIRBs	()	()	Dates: _____
Fire extinguishers	()	()	_____
First aid materials	()	()	_____
Radios/Communication equipment	()	()	_____
Emergency instructions	()	()	_____
Injury placard	()	()	_____
Compass	()	()	_____
Anchor	()	()	_____
General alarm	()	()	_____
High water alarm	()	()	_____
Bilge pump	()	()	_____
Adequate means of escape	()	()	_____
Watertight closures present	()	()	_____
Nautical charts for applicable areas	()	()	_____

Additional Comments/concerns:

Observer _____ Date _____

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Figure 8-1: Vessel Safety Orientation Checklist

IV. Safety While Boarding or Disembarking Vessels

Wear a life jacket at all times on skiffs or other small vessels. When climbing, you should not be encumbered with heavy backpacks or baggage. Balance is important and both hands must be free while boarding or leaving a vessel. Use a daypack and wear comfortable footwear such as Xtra-Tuffs or athletic shoes that give sure footing. Time your actions with the movement of the boat; i.e. start the climb up a ladder from the top of the up-and-down cycle to avoid being pinched against the ladder by a moving boat. All baggage should be secured with lines and transferred via rope lines or cargo nets. Observer baskets and luggage have been lost overboard because they were thrown without lines attached.

Personal Health and Safety Aboard Vessels

Fishing vessels have many potentially dangerous areas. Be aware of the surroundings at all times and keep eyes and ears tuned to what is going on. The hours, the environment, the food, and the work may be quite different from what your body is accustomed to. Drinking plenty of water and eating enough food are two critically important factors in maintaining health in this new environment.

General Safety Precautions on Board

- Apparel with loose strings or tabs and jewelry such as rings should be avoided as these might become caught in the equipment or moving belts. Long hair should be tied back.
- Don't run aboard ships, particularly up stairwells. Always hold handrails in stairwells and on ladders. Slipping, tripping, and falling are the most common causes of injury.

- Lift correctly! When lifting, get as close as possible to the object, keep the back straight while using your legs. On a moving vessel, this is critical because unexpected movements can cause back strain. Don't be afraid to ask for assistance in moving large weights.
- Fatigue and sleep deprivation suffered by the crew and by the Observer are threats to everyone's safety. Be aware of the physical state of other people on the vessel—whether the person on watch or in control of the gear. Fatigued individuals make mistakes. Monotonous work, such as longline tally samples, is difficult to do accurately and safely when tired. Follow the example of the crew and “catch up” on sleep when there are breaks in fishing. Vegetarians (due to meat-and-potatoes menus) and diabetics (due to odd eating schedules) need to be especially concerned about getting a proper diet. Dietary supplements, vitamins, and extra medications should be considered.
- When you are not feeling well, use extra caution and reduce the time spent working.

Working on Decks

- Wear a life vest or other flotation and boots when on deck.
- Do not stay outside on the deck during rough seas. One Observer was swept forward over a trawler's winches by waves sweeping up the stern ramp. When outside, remain in full view of a second party at all times.
- Watch out for slick spots where the deck is wet and oily or frozen, step carefully over the half-foot combing rising from the bottom of metal

latch doors and passageways, and look out for low overheads in vessel stairwells and watertight doors.

- Beware of trawl cables under strain, they have given way and have maimed and killed fishermen. Whenever a cable is subjected to tension, stand out of the way of backlash. If the Observer sampling station is on deck, stop working while a trawl is being set or retrieved and go to a safe place.
- Explain to the crew that codend and/or bin/trawl alley measurements will need to be done once the winches have stopped. Ask for advice on a safe place to stand. When nets are being hoisted off the deck, stand clear. Heavy nets have fallen near Observers when the suspending cables parted.
- Watch for moving pots and face the direction of the pot launcher while working. Stay away from the buoy line when the crew is launching pots. Crewmen have been caught in a loop, or the “bite,” of the line and pulled overboard.
- Wear eye protection on longliners whenever near the moving hooks.
- Use a gaff to collect fish to protect your hands and keep your body further away from the line.

Seasickness

One of the least pleasant aspects of going to sea is the possibility of seasickness. An individual's susceptibility to seasickness is highly variable. Observers that have experienced motion sickness in cars, planes, or amusement park rides, may experience seasickness during the cruise. Most people feel some level of discomfort when they first go to sea. Seasickness is a result of a conflict in the inner ear (where the human balance mechanism resides) caused by the erratic motion of the ship through the water. Inside the cabin of a rocking boat, for example, the inner ear detects changes in linear and angular acceleration as the body bobs with the boat. But since the cabin moves with the passenger, the eyes register a relatively stable scene. Agitated by this perceptual incongruity, the brain responds with stress-related hormones that can lead to nausea and vomiting. Its effect can be magnified by strong smells (like diesel fumes or fish, which are part of daily life at sea). Seasickness usually occurs in the first 12-24 hours after sailing. For most people, seasickness dissipates when the body becomes acclimated to the ship's motion (getting one's "sea-legs"). In rare cases, an individual may stay ill beyond the first couple of days at sea, regardless of sea state. If this occurs, dehydration may become life threatening if it leads to shock. Take seasickness medication before going to sea. There are several over-the-counter or prescription medications available to minimize seasickness. Antihistamines such as Dramamine (generic name is dimenhydrinate) or Bonine (generic name is meclizine) are effective and are available over-the-counter. However, these drugs cause drowsiness. A two part, prescription-only drug called the "Coast Guard Cocktail", contains promethazine, a seasick-preventing antihistamine coupled with ephedrine, which prevents drowsiness. Transderm Scop is another prescription-only motion sickness drug. It is a dime-sized adhesive patch that is worn behind the ear and delivers a continuous dose of scopolamine. Each patch lasts for 72 hours. The main side effects of the patch are dry mouth and occasionally blurry vision, but there is less drowsiness.

Acupressure wristbands and eating crystallized ginger are other remedies used with varying success. Seasick medications must be taken before the symptoms begin. Most medications take several hours to be absorbed into the body. If you are vomiting and cannot keep anything in your stomach taking medication at sea will not be an option. Even if you doubt that you will get seasick, you might want to take the medication before you board as a precaution against rough weather. If you should get seasick, take comfort in the fact that recovery is only a matter of time. All that is usually required for a complete recovery is some patience. Here are a few tips and considerations regarding seasickness:

- Continue eating items like crackers, dry toast, dry cereal, etc. (avoid anything greasy, sweet, or hard to digest). Keeping something in your stomach suppresses nausea, or, when vomiting, eliminates painful “dry heaves”.
- Keep drinking fluids. Seasickness and related medications cause dehydration and headaches. Try to drink juices low in acidity, clear soups, or water, and stay away from milk or coffee.
- Focus on the horizon to eliminate the visual conflict in your brain.
- The vessel’s motion is generally less pronounced the further astern you go. Try to stay as far back from the bow as possible.
- Keep working. Most people find that being busy on deck keeps their minds off their temporary discomfort. Also, the fresh air out on deck is often enough to speed recovery.
- Carry a plastic bag. This simple trick allows some peace of mind and eliminates some of the panic of getting sick. When vomiting over the

side, be aware of which way the wind and waves are coming.

- Going to the leeward side will ensure that an unpleasant experience doesn't become any more unpleasant.
- Above all, don't be embarrassed or discouraged. When Observers are seasick, chances are that others people on board are seasick too! No one is immune to seasickness.

Fish and Mammal Poisoning

Bacteria from fish may lead to infection in cuts, scrapes, or punctures. To prevent "fish poisoning", wash your hands thoroughly after sampling in a solution of hot, soapy water. Change gloves often to keep them dry and discard any torn gloves. Treat ***all*** minor cuts, especially those on your hands, with antiseptic such as Betadine to avoid infection from fish slime.

Be cautious whenever wading through fish on deck. Fish spines, especially on rockfish, can penetrate rubber boots and cause painful wounds to the feet. Spines often carry bacteria and can lead to fish poisoning.

If a wound gets red or swollen, soak it for ½ hour in very hot, soapy water at least three times a day. Dry and bandage the wound. Antibiotics are commonly prescribed for fish poisoning. The vessel will probably have some on board should they be needed. Never leave an infection untreated--the threat to your health can become much more far-reaching than simply a pair of inoperative hands.

Take extra precautions against infection when collecting specimens from marine mammals. Because these mammals have similar biological systems to our own, organisms that infect them, can infect us. "Seal finger" is a fungal infection

of the hands that can easily be contracted by a scratch or bite.

Harassment

Providing a safe and hostility-free work environment is the responsibility of the contractor (as the employer) and the vessel's personnel (by regulation). It is of utmost importance to the Groundfish Observer Program. However, verbal, physical, or sexual harassment of Observers can occur at sea. While the crew of a fishing vessel may have established a working rapport among themselves, Observers who come on board for a single trip limit period are not part of that system and in fact, may be considered unwelcome government agents or even "fish cops." Observers, therefore, can be subject to negative attention, comment, or actions.

Harassment of Observers by vessel personnel is strictly prohibited in 50 CFR 679.7 9(g). "It is illegal to (1) Forcibly assault, resist, oppose, impede, intimidate, or interfere with an Observer."

Identifying Harassment

Harassment can take many forms such as:

- Repeatedly waking an Observer during sleep periods.
- Providing substandard accommodations and food.
- Criticizing an Observer's sampling techniques or reporting practices.

In all cases, harassment is defined as when the Observer feels threatened or feels that their work or living environment is being compromised. You may feel embarrassed, or worry that you did something to provoke the unwanted behavior, but

you have a right to perform your job in an environment free from this type of interference.

Sexual Harassment

Sexual harassment is unwelcome behavior of a sexual nature. Privacy is greatly reduced onboard a vessel, and interactions can become intense very quickly. Sexual harassment may include sexist remarks or behavior, or sexual advances which result in a tense and unproductive work environment. Examples of sexual harassment might include: suggestive sounds or gestures, sexual remarks about clothing, body or sexual orientation, leering or ogling, persistent sexual comments and jokes, or constant brushing against or touching a person's body. Sexual harassment is unwanted attention in a nonreciprocal relationship (relationships with vessel and plant personnel are prohibited under Observer standards of conduct). In most normal interpersonal relationships, an individual can exercise free choice in deciding to develop a relationship based on mutual caring and respect. These elements are absent in sexual harassment. Sexual assaults have occurred on fishing vessels at sea. If you feel harassed, report it before the problem escalates.

What to Do if Observers Experience Harassment

If you experience harassment in any form, confront it directly and document it completely. By reporting harassment, it protects future Observers as well as yourself. Please report any cases of harassment to the Observer Program or NOAA Fisheries Enforcement as soon as possible. The agency is unable to help with problems if they are unaware of them.

Follow these steps:

1. Say no. Tell the harasser that his/her comments, actions or advances are unwanted and that they should stop. Remember that you are the judge of whether another person's actions negatively affect you.

2. Don't fight fire with fire. Observers should behave professionally at all times. Make sure that verbal and non-verbal body language exhibit a clear message to the harasser to stop.
3. Document all harassment incidents from the very beginning. Even if you are unsure at first if you are experiencing harassment, record the details. They may provide you with the full story if the situation escalates. In the logbook, describe the situation, including who, what, where and when. Detail the attempts made to end the harassment and the response that was received.
4. If the problem continues, report it to the skipper. Tell the skipper the full story, explain that it is affecting your work, and request that he take steps to end the problem. Most skippers do not want trouble on the boat. If the skipper is informed that trouble is brewing, he should take appropriate action. Document any further incidents and the skipper's actions.
5. If the harassment is not taken care of by the skipper, or if there is a problem with the skipper, report the offense to a coordinator and your contractor at the first opportunity. If there is no resolution, the coordinator will make arrangements for you to leave the vessel.

Illness and Accidents

Observers must contact a coordinator and AOI any time an injury occurs or any time illness or injury prevents sampling!

If you become ill on board, such as coming down with a severe cold or flu or seasickness that inhibits work, you must inform your coordinator of the situation. If the illness gets worse or continues to affect your work for more than three days, your assignment may need to be changed. If you are hurt on board, contact AOI and your coordinator. If the accident is serious, the captain will contact the USCG who will respond as necessary.

V. Emergencies on Board

Cold-Water Near Drowning

Cold-water near drowning is a phenomena that has been observed in cold waters. Victims have been revived using CPR after being immersed in cold water for up to one hour. CPR is an exhaustive activity that requires more than one caregiver. The compression rate should be about 80 beats per minute in series of fifteen compressions, followed by two breaths. It has been said that bad CPR is better than no CPR. Keep in mind that although a victim looks dead, s/he may be revived by this technique

Man Overboard

Everyone has an active role in a man overboard emergency. If you witness someone falling over, you must notify the person at the vessel controls and keep the victim in sight. According to the station bill, crew members are assigned specific tasks; for example, donning an immersion suit to be the rescue swimmer, launching a life boat, or throwing a life ring. As an extra set of eyes, the best role for the Observer is

to keep eyes on the victim and an arm pointing to the victim. This helps the person at the controls.

Fire

A fire needs heat, fuel and oxygen. Remove any one of these components to stop a fire. Ships carry large quantities of fuel and offer few places to go in the event of fire. Station bills give specific duties responding to a fire on board including who is in charge of the fire fighting team, and what equipment each person is responsible to gather. It is wise to know where fire extinguishers and exits are located in every area of the vessel—especially those areas in which you spend time. Fire extinguishers have only short bursts of fire retardants, so back-up extinguishers should be located and brought to the fire as soon as the fire is discovered. To effectively use a fire extinguisher, fire in short bursts in a low, sweeping motion. Keep your body low to avoid smoke inhalation and heat. Do not attempt to fight any fire alone, (except a small fire e.g. a wastebasket fire)— sound the alarm immediately before action is taken. After a fire, thorough inspection must be made of the area—including adjacent walls and rooms, to be sure the fire did not spread and will not flare up again.

Flooding

When a vessel is taking on water, usually the crew has time to try and solve the problem. Malfunctioning pumps or leaks in through-hull fittings are not uncommon, and can usually be fixed with equipment on board. If the flooding condition worsens, the Coast Guard can drop pumps to a vessel via aircraft. Observers have limited roles in these types of vessel emergencies but should be prepared to assist if needed.

Sending a May Day

A mayday call is for a life-threatening emergency. The emergency frequencies are Channel 16 on VHF radios and 2182.0 kHz or 4125.0 kHz on single side band radios (SSB). VHF radios are for short range and SSB radios are for long-range communications (See Appendix R for more information on radios). Vessels are required to monitor the emergency frequencies at all times. Most radios have a red button that changes to the emergency frequency immediately. Near the radios, there should be a placard posted that describes MAYDAY calls. Be familiar with what constitutes a proper MAYDAY call:

- MAYDAY MAYDAY MAYDAY (said three times)
- Vessel name (said three times)
- Location
- Nature of emergency
- How many persons on board
- Vessel description
- What radio frequency is being used

Abandon Ship

The worst possible emergency requires a person to give up their shelter—the vessel. Never abandon the ship unless it is certain that being on board the vessel is more dangerous than being in the water. Lives have been lost because ships have been abandoned too soon during fires or flooding. Knowing the nearest exits, mustering areas, life raft locations, immersion suit locations, EPIRB locations, and the emergency equipment available become critical factors in helping you survive an abandon ship emergency.

General Abandon Ship Procedures are as follows:

1. Prepare to abandon ship by doing as many of the following things as time and circumstances permit:
 - Sound General Alarm.
 - Send Mayday.
 - Don immersion suits/PFDs. Put on extra warm clothing first if possible.
 - Prepare to launch life raft. Attach sea painter to vessel.
 - Assemble signal devices to take into life raft. These include EPIRBs, flares, smoke signals, flashlights, handheld radios, etc.
 - Get first aid kit to take into life raft.
 - Get extra food and water to take into life raft.
2. Muster at embarkation station.
3. When sinking is imminent or remaining on board is inappropriate:
 - Launch and board life raft.
 - Keep sea painter attached to vessel. Be prepared to cut sea painter immediately if there is risk to life raft or vessel sinks
4. Activate EPIRB and commence 7 Steps to Survival.

Donning the Immersion Suit

An immersion suit is a shelter that is required by the safety regulations for everyone aboard a vessel that operates in cold water. The assigned vessel will have enough aboard for the crew. You will be issued an immersion suit with your gear. You should always know where the immersion suits are stored. You should be able to put on an immersion suit in less than a minute, even in the dark!

The procedure for donning an immersion suit is as follows:

1. Sit on deck and work your legs into the suit. It may be necessary to remove your boots. Placing plastic bags over the boots or feet may help your legs slide easier.
2. Place your weak arm in first, and then pull the hood over your head (or hood first, then weak arm). If you have long hair, make sure that it is safely tucked in the hood.
3. Holding the zipper below the slide with one hand, lean back to straighten the zipper and pull the lanyard with the other hand. Secure the face flap. Do not inflate the air bladder until in the water.
4. Jumping in the water is the last resort. Ease yourself into the water if possible. If jumping, protect your head and keep your feet together to protect from floating debris.

Life Rafts

The assigned vessel will have enough life rafts or life boat capacity for everyone on board. Life rafts are stored in canisters that allow them to float free and automatically inflate if the vessel sinks. It is much better to manually launch and inflate the raft if there is time. Know where the rafts are stored, how to remove them from the cradle, where to launch them, and how to inflate them.

Survival Kits

A personal survival kit can take up very little space in an immersion suit yet greatly enhance the ability to survive. Think of the seven steps to survival and choose items that may help in an emergency situation on board a vessel. Items such as a knife, dental floss (a strong multi-purpose line), plastic garbage bags, matches, signal mirrors, a compass, hard candy, or bouillon cubes are small items that fit in a zip-lock bag and could save your life. Vessels may have an emergency bag stored and a person named in the station bill to bring it.

EPIRBs

The vessel will have at least one 406 MHz EPIRB mounted in a float-free bracket that will be automatically activated in the event of sinking. The signal is received by satellite, and in new styles, will identify the sender. It is important to know where the EPIRB is mounted and how to activate it manually. In the event of an abandon ship emergency it is an item you want to take with you. Someone will be assigned that duty on the station bill. Be sure to locate the EPIRB(s) on the vessel and read the directions on how to activate them.

The Seven Steps to Survival

The USCG assembled the Seven Steps to Survival from personal experiences of those who survived emergency situations. Committing the seven steps to survival to memory should be one of the goals of every Observer learning how to survive at sea. Every time the situation changes—boarding a raft, reaching land, etc., the seven steps begin again.

1. **Recognition** - You must quickly recognize the seriousness of the situation and that your life is in danger. Hesitation or denial may cost your life.
2. **Inventory** - Stop and assess the situation. Decide what you have that will help you survive and what are the hindrances. Inventory equipment, weather, your skills, injuries, and your mental condition. Doing so will help you to make good decisions that will help you survive.
3. **Shelter** - Your biggest enemy is the cold. Shelter can be clothing, an immersion suit, a raft, or an overturned vessel—anything that protects you against the loss of your body heat. Water can take heat away from your body much quicker than air, so shelter also helps you keep as dry as possible. High heat loss areas, including the head and neck, need to be protected most. The added buoyancy of a PFD helps to keep your head and neck out of water, therefore conserving heat. In a shore survival situation, the seven steps to survival start over again and shelter is your first priority after you inventory the situation. It takes hours to construct adequate shelter on shore and you must do so as soon as possible.

4. **Signals** - Anything that attracts attention and conveys a message is a signal. Radios, EPIRBs, and flares are signals carried by vessels. Immersion suits have lights attached. You may have a signal mirror in your personal survival kit. If abandoning ship, anything that can be tossed overboard may help an aircraft spot your position. ***Anything that makes you bigger, brighter, or different from your surroundings is a signal***, so an attempt to gather items, which float, from a sinking ship should be made. In a shore survival situation, three of anything (fires, buoys, immersions suits on the beach) is an internationally recognized distress signal.
5. **Water** - It is recommended that humans drink two liters of water per day to stay healthy. You can live without water for only a few days, and will suffer dehydration from the onset of any abandon ship emergency. Life rafts have limited rations of water, so it is advised to gather as much as possible before abandoning ship, if time permits. Have a strategy for gathering extra water in an emergency. ***Never drink seawater or urine.***
6. **Food** - A person can go without food much longer than without water. Never eat food without water—your body requires water to digest food. Life rafts are supplied with limited food rations. In a shore survival situation, many types of edibles can be found near shore. Almost any animals or green plants in the intertidal zone are edible, but avoid mussels or clams—they may cause paralytic shellfish poisoning.

7. **Play** - Studies have shown that mental attitude makes a positive difference in a survival situation. Play is anything that keeps you occupied and prevents your mind from dwelling on the difficulties you are facing. Play could be reading, telling jokes or stories, completing a task, improving your shelter—anything that keeps your mind active and focused.

Summary

You can learn a lot about sea safety and survival from vessel personnel, who probably have many years of sea experience among them. However, the ultimate responsibility is upon you to survive. It is easy to think “this will never happen to me” and “the skipper will know what to do,” but those thoughts may cost you your life. Take the time to learn as much as you can, and consider what your actions will be in emergency situations. Visualize yourself and your actions in emergency scenarios in the factory, on deck, in your bunk, or anywhere you spend time. Having thought about an emergency will make your actions more automatic, and the time saved may save your life. Your life is worth far more than any data you could collect in the fishery.

VI. Federal Requirements for Commercial Fishing Industry Vessels greater than 60 ft.

General Requirements

Documentation & Official Number 46 CFR 67-69

- Vessel must be measured and documented, documentation must be on board.
- Hailing/home port, and official number must be displayed in 4 inch letters on both bows.
- Official number must be 3-inch letters and attached to integral interior structure member.

Operator License 46 U.S.C. 8304

- The master, mate, and engineers on the vessel of 200 gross tons or more must have appropriate USCG license and operate within the limitations of the licenses.

Commercial Fishing Vessel

Safety Inspection Requirements 50 CFR 679.50, 33 CFR Chapter I, 46 CFR Chapter I, 46 CFR 28.710, 46 CFR U.S.C. 3311

- Must have a valid Commercial Fishing Vessel Safety Decal issued within the past 2 years that certifies compliance with regulations found in 33 CFR Chapter I and 46 CFR Chapter I.
- Must have a valid certificate of compliance issued pursuant to 46 CFR 28.710.
- Must have a valid certificate of inspection pursuant to 46 U.S.C.3311.

Navigational Requirements

Compass 46 CFR 28.230

- Each vessel must be equipped with an operable magnetic steering compass with a compass deviation table at the operating station.

Electronic Position Fixing Devices 46 CFR 28.260

- Vessels 79 feet or more in length must be equipped with an electronic positioning fixing device such as SAT NAV, GPS, LORAN, OMEGA, or RDF that is capable of providing accurate fixes for the area of operation.

Navigation and Anchor

Lights

- Must be used from sunset to sunrise and when there is limited visibility.
- Navigation Information 46 CFR 28.225.
- Current corrected charts of the appropriate areas and scale for safe navigation.
- Current corrected copy (or applicable extract) of the U.S. Coast Pilot, USCG Light List, National Ocean Service Tide Tables and National Ocean Service Current Tables.

Anchor and Radar Reflectors 46 CFR 28.235

- Vessels operating with more than 16 individuals on board or vessels operating outside boundary water.
- Each vessel must be equipped with appropriate anchor(s) and chain(s), cable, or rope.
- Nonmetallic hull vessels must be equipped with a radar reflector unless it is a vessel rigged with gear that can provide a radar signature at six miles.

Radar and Depth Sounding Devices 46 CFR 28.400

- Vessels with 16 or more individuals, or vessels operating outside boundary water, that have had their keel laid or major conversion on or after September 15, 1991:
- Each vessel must be fitted with a general marine radar system for surface navigation with a radar screen mounted at the operating station.
- Each vessel must be fitted with a suitable echo depth-sounding device.

Communications Requirements

Communications Equipment 46 CFR 28.245, 46 CFR 28.375, 33 CFR 26.03, 47 CFR 80

- Each vessel must be equipped with VHF radiotelephone communication equipment operating within 156-162 Mhz band.
- A radio transceiver installed on board before Sept. 15, 1991, operating on 4-20 Mhz band may continue to be used to meet the requirements for vessels operating more than 100 miles from the coastline in Alaskan waters.
- All communications equipment must be operable from the vessel's operating station and must comply with FCC requirements including a Ship Radio Station License.
- An emergency source of power, that is independent of the main power supply, outside of the main machinery space, and capable of providing power to communications equipment for at least 3 continuous hours.

Emergency Requirements

Personal Flotation Devices (PFD) 46 CFR 28.105, 46 CFR 28.110, 46 CFR 28.135, 46 CFR 28.140

- CG approved immersion suit with 31 square inches of retro reflective tape on the front and back of each side.
- Must have CG approved PFD light.
- Must be marked with the name of the vessel, owner of device, or the individual to whom it is assigned.

Ring Buoy 46 CFR 28.115 & 46 CFR 28.135

- Vessels less than 65 feet must have 1 orange Ring Life Buoy at least 24 inch in size, with 60 feet of line, and marked with name of vessel.
- Vessels greater than 65 feet must have 3 orange Ring Life Buoys at least 24 inch size with 90 feet of line. Marked with the name of the vessel.

Safety Protection Device (SPD)

- Vessels less than 65 feet must have a whistle that is audible for 1/ 2 minute.
- Vessels over than 65 feet must have a whistle that is audible for 1 minute.

Survival Craft 46 CFR Tables 28.120 (a)

- Between shore & 12 miles off coastline - inflatable buoyant apparatus.
- Between 12-20 miles off coastline - inflatable life raft.
- Between 20-50 miles off coastline - inflatable life raft with SOLAS B pack.
- Beyond 50 miles off coastline - inflatable life raft with SOLAS A pack.

Stowage of Survival Craft 46 CFR 28.125

- Each inflatable life raft that is required to be equipped with a SOLAS A or B equipment pack automatically inflates if the vessel sinks.
- Each inflatable life raft must be kept readily accessible for launching or be stowed so they will float free if the vessel sinks.
- Each hydrostatic release unit in a float free arrangement must have a CG approved number starting with 160.062.

Launching of Survival Craft 46 CFR 28.310

Vessels with 16 or more individuals, or vessels operating outside boundary water, that have had their keel laid or major conversion on or after September 15, 1991:

- A gate or other opening must be provided in deck rails, lifelines, or bulwarks adjacent to the stowage location of each survival craft which weighs more than 110 pounds, to allow the survival craft to be manually launched.

Embark Stations 46 CFR 28.395

Vessels with 16 or more individuals, or vessels operating outside boundary water, that have had their keel laid or major conversion on or after September 15, 1991:

- Each vessel must have at least one designated survival craft embark station (more if necessary) that is readily accessible from each accommodation space and workspace.
- Each embark station must be arranged to allow the safe boarding of survival craft.

Means of Escape 46 CFR 28.390

Vessels with 16 or more individuals, or vessels operating outside boundary water, that have had their keel laid or major conversion on or after September 15, 1991:

- Each space used by an individual on a regular basis or which is generally accessible to an individual must have at least two widely separated means of escape. At least one of the means of escape must be independent of watertight doors. Means of escape include normal exits and emergency exits, passageways, stairways, ladders, deck scuttles and windows.

Visual Distress Signals 46 CFR 28.145

- Vessels operating more than 3 miles from shoreline are required to carry 3 parachute flares, 6 hand flares, and 3 smoke signals.
- Vessels operating within 3 miles of the coastline are required to carry night and day visual distress signals. Night signals can be one electric distress light or 3 CG approved flares. Day signals can be either one distress flag or 3 CG approved smoke signals.

EPIRB 46 CFR 28.150 & 46 CFR 25.26

- Vessels operating beyond coastal waters are required to have an FCC type accepted category 1, float-free, automatically activated, 406 Mhz EPIRB.
- Each EPIRB must be marked with vessel name and type II retro reflective material (46 CFR 28.135).

General Alarm 46 CFR 28.240

- A general alarm system suitable for notifying individuals on board is required with a contact

marker at the operating station. The general alarm must be capable of notifying individuals in any accommodation or workspace. Under certain circumstances (defined at CFR 28.240) a public address system that is audible in all workspaces meets may meet regulatory requirements.

- In noisy workspaces a flashing red light is required.
- The general alarm system must be tested prior to getting underway and at least once each week while underway.

Emergency Instructions 46 CFR 28.265

- As applicable, emergency instructions are required for: survival craft embarkation stations and personnel assignments; fire, emergency, and abandon ship signals; immersion suit location and donning information; procedures for making distress calls; list of each individual's emergency and specially established procedures. Specific details and posting requirements are found at 46 CFR 28.265

Instruction, Drills, and Safety Orientation 46 CFR 28.270, 46 CFR 28.275

- At least once a month the master must ensure that drills are conducted and instructions are given to each person on board.
- No individual may conduct the drills or provide the instructions required by this section unless that individual has been trained in the proper procedures for conducting the activity. An individual licensed for operation of inspected vessels of 100 gross tons or more needs to

comply with the requirements in 46 CFR 28.275.

- Drills and instructions are to include: abandoning the vessel, fire fighting, man overboard recovery, stabilizing vessel after unintentional flooding, launching survival craft, and recovery of life and rescue boats, donning immersion suits, PFD's, fireman's outfits and breathing apparatus, radio and visual distress calls and signals, activating the general alarm and reporting of inoperative alarms and fire detection systems.
- Viewing of videotapes followed by discussion led by a person familiar with the subjects can be used for instruction requirements but not as a substitution for drills.
- The master must ensure that all individuals who have not received the above instruction or participated in the drills receive a safety orientation before the vessel may be operated. This safety orientation must explain the emergency instructions required by 46 CFR 28.265 and cover the specially established procedures listed above.

High Water Alarms 46 CFR 28.250

- Alarms are to be both visual and audible and installed at the operating station.
- Alarms are to indicate high water in each of the following normally unmanned areas: a space with a through-hull fitting below the deepest load water line, a machinery space bilge, bilge well, shaft alley bilge, or other space subject to flooding from sea water piping within the space, a space with a non-watertight closure such as a

space with a non-water tight hatch on the main deck.

Bilge Systems 46 CFR 28.255

- All vessels must be equipped with a bilge pump capable of draining any watertight compartment, other than tanks and small buoyancy compartments, under all service conditions.
- If portable bilge is used to meet this requirement, a suitable suction hose and discharge hose must be provided that will reach the bilges of all watertight compartments it must serve and ensure overboard discharge. The portable pump must be capable of dewatering each space at a rate of at least 2 inches of water depth per minute.

Casualties and Injuries 46 CFR 28.080, 46 CFR 28.090

If any of the following incidence occur, the master or other vessel representative must as soon as possible, contact the nearest USCG Marine Safety Office and submit written report CG-2692 within five days:

- Groundings
- Loss of main propulsion or primary steering
- Loss of life
- Injury which requires professional medical treatment beyond first aid and render the victim unfit to perform vessel duties.
- Any damage over \$25,000, any occurrence affecting the sea-worthiness of the vessel such as; fire, flooding, or the failure or damage to fixed fire extinguishing systems, lifesaving equipment.
- Auxiliary power generating equipment or bilge pumping systems

Injury Placard 46 CFR 28.165

- A placard at least 5"x 7" stating the requirements of reporting injuries to vessel operator or agent as defined by US law, 46 U.S.C. 10603 must be posted in prominent place.

First aid Equipment and Training, 46 CFR 28.210

- Each vessel must have on board a first aid manual and medicine chest of a suitable size in a readily accessible location.
- Vessel with more than 2 individuals must have at least 1 individual approved in first aid and at least 1 individual approved in CPR or 1 individual approved in both.
- Vessels with more than 16 individuals on board must have at least 2 individuals approved in first aid and at least 2 individuals approved in CPR. Individuals approved in both may be counted against both requirements.
- Vessels with more than 49 individuals on board must have at least 4 individuals approved in first aid and at least 4 individuals approved in CPR. Individuals approved in both may be counted against both requirements.

Fire Control Requirements Fire extinguishers 46 CFR 28.155 & 46 CFR 28.160 & 46 CFR 25.30

- Vessels over 65' are required to have approved USCG approved fire extinguishers in each of the following locations: Pilot house, service spaces, galleys, paint lockers, accessible baggage and storage rooms, workshops and similar spaces, engine room, auxiliary engine room, auxiliary spaces, and generator spaces. **NOTE:** Specifics on the type of extinguishers, number

per location, and legal description of spaces where extinguishers are required can be found at 46 CFR 28.155 & 46 CFR 28.160 & 46 CFR 25.30.

Fire Pumps, Fire Mains, Fire Hydrants, and Fire Hoses. 46 CFR 28.316

Vessels with 16 or more individuals or that are outside of boundary borders that have had their keel laid or major conversion on or after September 15, 1991:

- Vessels >36' must be equipped with a self-priming, power driven fire pump connected to a fixed piping system.
- Specific requirements regarding locations and specifications for fire mains, fire hydrants, and fire hoses can be found at 46 CFR 28.316.

Fireman's Outfits and Self-contained Breathing Apparatus CFR 28.205

- Vessels equipped with refrigeration units using ammonia must be equipped with at least 2 self-contained breathing apparatus with spare air bottles for each.
- If the vessel has more than 49 individuals on board, at least 2 firemen's outfits, stowed in widely separated locations, are required. A fireman's outfit consists of one pressure demand open circuit MSHA/NIOSH approved self-contained breathing apparatus with a 30 minute air supply and a full face piece, one lifeline with a belt or suitable harness, one flashlight, a rigid helmet, boots, gloves, protective clothing, one fire axe, and a spare air bottle.

Miscellaneous Requirements

Guards for Exposed Hazards 46 CFR 28.215

- Suitable hand covers, guards, or railings must be installed in way of machinery that can cause injury to personnel, such as gearing, chain or belt drives, and rotating shafting. This is not meant to restrict necessary access to the fishing equipment such as winches, drums, or gurdies.
- Internal combustion engine exhaust pipes within reach of personnel must be insulated or otherwise guarded to prevent burns.

Watertight and Weather tight Integrity 46 CFR 28.560

- Each opening in a deck or a bulkhead that is exposed to weather must be fitted with a weather tight or watertight closure devise.

Pollution Prevention 33 CFR 151, 33 CFR 155

- Vessels are required to post oil pollution and garbage placards, and to have a written solid waste management plan that describes procedures for collecting, processing, storing, and discharging garbage, and designated person in charge of carrying out the plan. Restrictions on dumping can be found at 33 CFR 151, 33 CFR 155

Sexual Abuse Act of 1986 46 CFR U.S.C. 10104

- It is the responsibility of the master to report to the USCG any complaints of sexual offenses including aggravated sexual abuse, sexual abuse, sexual abuse of a minor or ward, and sexual contact per 46 CFR U.S.C. 10104

